Washington State Institute for Public Policy

Benefit-Cost Results

Mentoring: School-based by teachers or staff

Public Health & Prevention: School-based

Benefit-cost estimates updated December 2019. Literature review updated May 2018.

Current estimates replace old estimates. Numbers will change over time as a result of model inputs and monetization methods.

The WSIPP benefit-cost analysis examines, on an apples-to-apples basis, the monetary value of programs or policies to determine whether the benefits from the program exceed its costs. WSIPP's research approach to identifying evidence-based programs and policies has three main steps. First, we determine "what works" (and what does not work) to improve outcomes using a statistical technique called meta-analysis. Second, we calculate whether the benefits of a program exceed its costs. Third, we estimate the risk of investing in a program by testing the sensitivity of our results. For more detail on our methods, see our Technical Documentation.

Program Description: In school-based mentoring programs, mentors and students meet in schools for one-on-one or small group meetings to build interpersonal relationships, support prosocial behavior, and support academic achievement. Among studies in this analysis, mentors are school teachers or staff members. Mentors typically receive some initial training and ongoing support throughout the course of the intervention. Participants were elementary, middle, and high school students identified by teachers or staff as being at risk. At-risk students include students struggling to meet academic standards, exhibiting behavioral and social-emotional problems, and/or having a history of absences and discipline referrals. Participants in the included studies received weekly mentoring between 4 and 9 months.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$4,627
Participants	$10,932
Others	$6,561
Indirect	($2,001)
Total benefits	$20,119
Net program cost	($3,469)
Benefits minus cost	$16,650

Benefit to cost ratio	$5.80
Benefits minus costs	$16,650
Chance the program will produce benefits greater than the costs	71 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2018). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$63	$139	$31	$233
Labor market earnings associated with high school graduation	$12,121	$5,160	$6,625	$0	$23,906
K-12 grade repetition	$0	$2	$0	$1	$4
K-12 special education	$0	$57	$0	$28	$85
Health care associated with externalizing behavior symptoms	$45	$161	$166	$80	$453
Costs of higher education	($1,235)	($815)	($370)	($408)	($2,828)
Adjustment for deadweight cost of program	$0	$0	$0	($1,735)	($1,735)
Totals	$10,932	$4,627	$6,561	($2,001)	$20,119

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

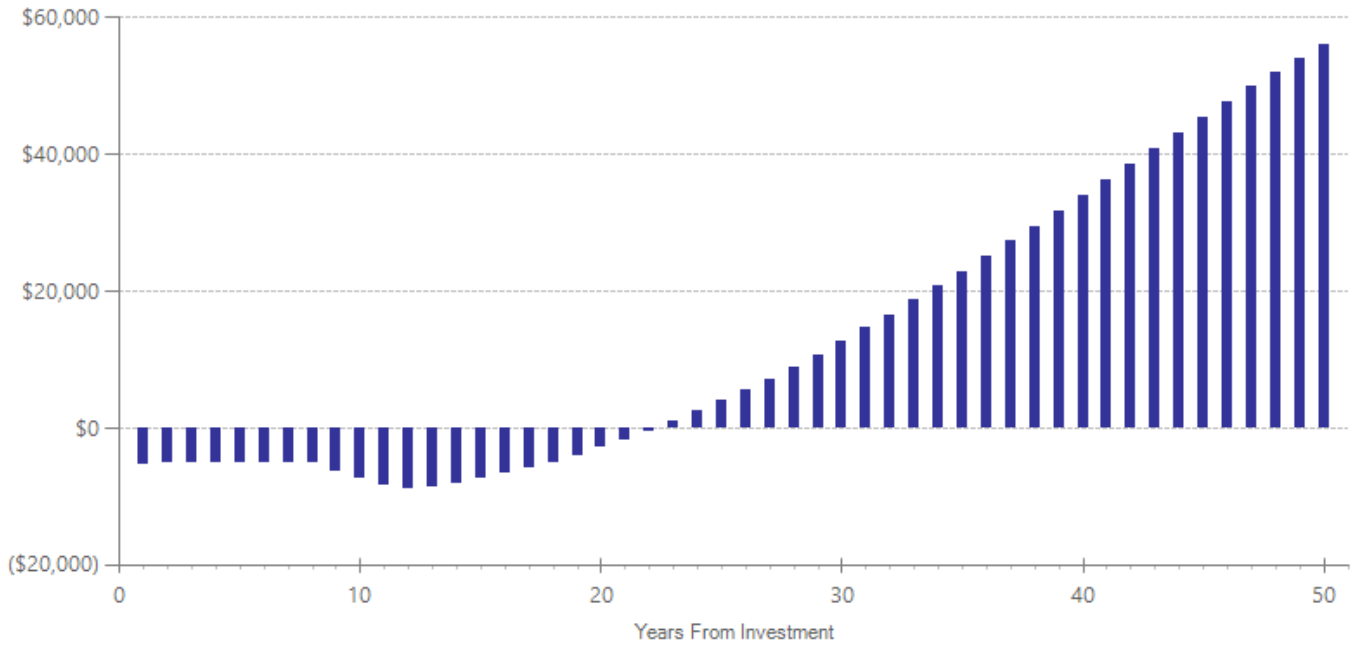
Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$3,293	2016	Present value of net program costs (in 2018 dollars)	($3,469)
Comparison costs	$0	2016	Cost range (+ or -)	20 %

The annual per-participant cost estimate is based on a weighted average estimate of teacher or staff time used to mentor students. We use the average Washington State compensation costs (including benefits) for K–12 teachers and staff as reported by the Office of Superintendent of Public Instruction. On average, teachers and staff in the included studies provided 68 hours of mentoring time for over four months and received an average of $55 per hour.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

Outcomes measured	Treatment age	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
				First time ES is estimated			Second time ES is estimated				
				ES	SE	Age	ES	SE	Age	ES	p-value
Externalizing behavior symptoms	10	1	111	-0.085	0.133	10	-0.047	0.082	13	-0.224	0.094
Grade point average^	10	2	108	0.051	0.260	10	n/a	n/a	n/a	0.143	0.377
High school graduation	10	1	66	0.262	0.337	18	0.262	0.337	18	0.689	0.068
Internalizing symptoms	10	1	111	-0.110	0.133	10	-0.110	0.133	12	-0.289	0.031
Office discipline referrals^	10	2	127	-0.204	0.159	10	n/a	n/a	n/a	-0.719	0.077
School attendance^	10	2	77	0.152	0.211	10	n/a	n/a	n/a	0.399	0.060
Suspensions/expulsions^	10	1	111	-0.131	0.535	10	n/a	n/a	n/a	-0.344	0.562

^WSIPP's benefit-cost model does not monetize this outcome.

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

Converse, N., & Lignugaris-Kraft, B. (2008). Evaluation of a school-based mentoring program for at-risk middle school youth. *Remedial and Special Education, 30*(1), 33-46.

DeSocio, J., VanCura, M., Nelson, L.A., Hewitt, G., Kitzman, H., & Cole, R. (2007). Engaging truant adolescents: Results from a multifaceted intervention pilot. *Preventing School Failure, 51*(3), 3-9.

Wyman, P.A., Cross, W., Hendricks, B.C., Yu, Q., Tu, X., & Eberly, S. (2010). Intervention to strengthen emotional self-regulation in children with emerging mental health problems: Proximal impact on school behavior. *Journal of Abnormal Child Psychology, (38)*5, 707-720.

For further information, contact:
(360) 664-9800, institute@wsipp.wa.gov

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